RA Briefing Paper – Sediment Sampling at West Lake

Historical Summary

- 1996 (McLaren/Hart) sampled sediment from 9-onsite weir locations – **Identified radionuclides in on-site weirs 5, 6, 7, and 9, or near the buffer zone/AAA Trailer property and the southwest portion of Area 2** (Attachment 1).

- 1997 (EMSI) collected four additional sediment samples from outfalls on and around the perimeter of the site by PRPs **(Sed 1-4). RIM was not identified in those results** (or combined radium or thorium exceeding 7.9 pCi/g) (Attachment 1).

Summer/Fall 2015 – EPA and state begin discussions for the need to perform storm water monitoring of OU- 1, including both storm water and sediment sampling.

- November 2015 – EPA, PRPs, and MDNR perform site walk to evaluate for potential and existing storm-water outfalls and sediment sampling locations.

- November 2015 - MDNR executes collection of dust swipe/soil/sediment samples as part of the "**Vicinity Report**" which was released publicly in March 2016. **Results identified two soil samples near/on buffer zone that meet definition of RIM (S09 and S10)** (Attachment 2). **MDNR Vicinity Report also recommended three locations for possible follow up due to slightly elevated above background radiological analytical results but well below the EPA definition of RIM: S02, S03, and S04.** Of these samples, S03 is a sediment sample that is located in proximity to SED-4 which was sampled as part of the RI investigation for the Site and more recently as part of the additional characterization work.

- December 28, 2015 – EPA decided to collect new sediment samples following heavy rain event and began developing QAPP while soliciting feedback from MDNR.

- January 2016 – PRPs collected sediment samples from previous RI sediment sampling locations (Sed 1, 2 and 4) in accordance with requirements of Area 1/Area 2 Additional Characterization. EPA collected 100% splits. **One sample location, collected (on Bridgeton's property but outside the Area 2 fence) in drainage in vegetated area along St. Charles Rock Road (Sed 4) identified RIM (combined Thorium 230 level of 14 pCi/g; EPA split is 19.8 pCi/g).** This is also in general area of former stormwater detention/drainage area. We just received the validated data this week.

- February 2016 – EPA sediment sampling QAPP was concurrently finalized/approved with seven locations identified for sediment sample collection

(Attachment 3). Of the seven locations **two were actually collected (Sediment 4 and 6; note different nomenclature and not same as RI location Sed 4) in March 2016** to closely replicate or support MDNR buffer zone sample locations from the vicinity report (S09 and S10). The Agency is waiting for the results later this week (being validated by START contractor). The other 5 locations had already been collected as either part of the Area 1/Area 2 work (Sed 1, 2 and 4 discussed above), or the sampling location(s) did not contain any sediment. MDNR was made aware of these events as they unfolded.

- March-April 2016 – PRPs continue with NCC work that has expanded cover in Area 2 and along Buffer Zone/AAA trailer and NE side of Area 2 along the the landfill berm next to Area 2 fence which is adjacent to St. Charles Rock Road. **Two weeks ago EPA instructed the PRP to collect additional soil sampling along berm crest and at the opposite side base. Results are pending from PRPs.** Please note this area is sensitive to MDNR, who believes it could be an outfall location not previously identified by PRPs with potential for sediment contribution, as it is heavily wooded and difficult to observe.

- Two weeks ago following a heavy rain event an OSC on oversight evaluated the Buffer Zone/AAA Trailer area and NE side of Area 2 along the landfill berm along St. Charles Rock Road. No discharge over the berm along St. Charles Rock Road was observed. Heavy discharge was flowing down the slope of the newly installed rock buttress in the Buffer Zone and AAA Trailer area, apparently due to run off over newly laid NCC. This did not appear to be discharge coming across Area 2 and over the berm. The PRP collected samples of the runoff. Previous storm water samples collected have exceeded runoff limits for TDS, BOD and COD.

Actions Currently Underway

- May 2-6, 2016 – OSC performing NCC oversight will perform reconnaissance to further evaluate potential for storm water and sediment drainage patterns to migrate along St. Charles Rock Road (weather conditions are ideal for this action).

- MDNR has started the process to draft the storm water permit renewal for Bridgeton Landfill. They are in discussions with Bridgeton Landfill about the potential co-mingling of discharges from OU1 and OU2 and how this might be handled in the permit.

- May:
  - SF team continues to review historical data sets in effort to better understand isolated RIM detection at Sed 4 location and potential for any sediment migration paths or outlier result.
  - **June 20 face to face with MDNR to review collective results and discuss potential follow on actions for site outfall monitoring post-NCC work.**

Future Actions

- Additional Investigation in the vicinity of Sed 4 is likely warranted and program needs to determine the best mechanism to proceed. A likely next step would be to require an additional portion of the landfill property to be fenced if after additional investigation a contaminated area is discovered.

- We may also want to ask the PRPs to restrict access to the general area along St. Charles Rock Road outside of the permanent fencing while additional investigation is considered/implemented.

- PRPs are meeting with EPA technical team on May 11 regarding RI Addendum and we will also discuss the storm water and sediment data collected to date.

- EPA and MDNR need to determine necessary outfalls to monitoring for OU1 and coordinate for development of an enforceable agreement for ensuring PRPs perform this monitoring in the future until OU1 and OU2 remedies are implemented.

- State is engaged in commenting on PRP's "permit" application and approximately 90 day away from public noticing the draft.